

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Chrysanthemum parthenium*

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|--------------------------|------------|---------|----------|----------------------|--|
| 67 | 1,8-CINEOLE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 0 | 1-BETA-HYDROXYARBUSCULIN | Plant | -- | -- | | |
| 0 | 10-EPICANIN | Plant | -- | -- | | |
| 0 | 8-BETA-REYNOSIN | Plant | -- | -- | | |
| 0 | ALPHA-COPAENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 2 | ALPHA-HUMULENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 28 | ALPHA-PINENE | Shoot | -- | 15 | -0.14595252753743698 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 13 | ALPHA-TERPINENE | Shoot | -- | 45 | -0.35510895262369646 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|----------------------|------------|---------|----------|---------------------|--|
| 23 | ALPHA-TERPINEOL | Shoot | -- | 2.5 | -0.2832600201311504 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | ALPHA-THUJENE | Shoot | -- | 15 | -0.2864465102156434 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 5 | ALUMINUM | Leaf | 1.1 | 6.2 | -0.7739201621517691 | |
| 5 | ALUMINUM | Plant | -- | 6 | -0.7451443685154636 | |
| 0 | APIGENIN-7-GLUCOSIDE | Plant | -- | -- | | |
| 112 | ASCORBIC-ACID | Leaf | 59 | 330 | -0.4133003020377577 | |
| 112 | ASCORBIC-ACID | Plant | -- | 330 | -0.5162152379862993 | |
| 0 | ASH | Plant | -- | 171000 | 0.9030718561913528 | |
| 0 | ASH | Leaf | 3060 | 17000 | -1.7945017791514293 | |
| 24 | BENZALDEHYDE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 1 | BENZYL-ISOBUTYRATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|--------------------|------------|---------|----------|----------------------|--|
| 1 | BENZYL-ISOVALERATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 2 | BENZYL-PROPIONATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 53 | BETA-CAROTENE | Plant | -- | 14 | -0.6513567486971203 | |
| 53 | BETA-CAROTENE | Leaf | 2.5 | 14 | -1.0769698969992798 | |
| 0 | BETA-CARYOPHYLLENE | Shoot | -- | 8 | -0.39375252938120847 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | BETA-FARNESENE | Shoot | -- | 38 | -0.24708098720222307 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 13 | BETA-PINENE | Shoot | -- | 4 | -0.12082019397820601 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 35 | BORNEOL | Shoot | -- | 9 | -0.3900888401961888 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------------|------------|---------|----------|----------------------|--|
| 12 | BORNYL-ACETATE | Shoot | -- | 28 | -0.36126712188937815 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 28 | CALCIUM | Plant | -- | 5810 | -0.8321353407836742 | |
| 28 | CALCIUM | Leaf | 1046 | 5810 | -0.8627855213639186 | |
| 9 | CAMPHENE | Shoot | -- | 95 | -0.1255113105525119 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 41 | CAMPHOR | Shoot | -- | 640 | -0.13323257181495227 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CARBOHYDRATES | Leaf | 92520 | 514000 | -0.7781607360165105 | |
| 0 | CARBOHYDRATES | Plant | -- | 514000 | -1.0198824234248682 | |
| 37 | CARVACROL | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 6 | CARYOPHYLLENE-EPOXIDE | Shoot | -- | 31 | 1.6391694335729892 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 24 | CHROMIUM | Leaf | 0.3 | 1.7 | -0.5014979759508905 | |
| 24 | CHROMIUM | Plant | -- | 17 | 0.7215583160252136 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|---------------------------|------------|---------|----------|--------|---|
| 0 | CHRYSANTHEMOLIDE | Plant | -- | -- | | |
| 0 | CHRYSANTHEMOMIN | Plant | -- | -- | | |
| 0 | CHRYSANTHENOL | Shoot | -- | 21 | 1 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 2 | CHRYSANTHENYL-ACETATE | Shoot | -- | 360 | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CHRYSANTHENYL-ANGELATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CHRYSANTHENYL-ISOVALERATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CHRYSANTHENYL-PROPIONATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CHRYSARTEN-A | Plant | -- | -- | | |
| 0 | CHRYSARTEN-B | Plant | -- | -- | | |
| 2 | COBALT | Plant | -- | -- | | |
| 2 | COBALT | Leaf | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|----------------|------------|---------|----------|----------------------|--|
| 4 | COSMOSIIN | Flower | -- | -- | | |
| 10 | CUMINALDEHYDE | Shoot | -- | -- | -0.32576507180696485 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | CURCUMENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 9 | DELTA-CADINENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | EO | Plant | 200 | 700 | -0.686929830421695 | |
| 0 | EO | Shoot | -- | 1500 | -0.8141965329475307 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | FAT | Leaf | 8640 | 48000 | -0.16862267810970435 | |
| 0 | FAT | Plant | -- | 48000 | -0.05468700183087534 | |
| 0 | FAT | Seed | -- | 312000 | 0.24552423015523567 | |
| 15 | FIBER | Plant | -- | 143000 | -0.5900378792839802 | |
| 0 | FIBER(CRUIDE) | Leaf | -- | 143000 | 0.4073212431936249 | |
| 0 | FIBER(DIETARY) | Leaf | -- | 390000 | 0.1864056874270924 | |

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|----------------|--------------------|---------------|---------|----------|----------------------|--|
| 11 | GAMMA-TERPINENE | Shoot | -- | 28 | -0.3749884139681809 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 2 | GERMACRENE-D | Shoot | -- | 45 | -0.3452637958418838 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 6 | IRON | Plant | -- | -- | | |
| 6 | IRON | Leaf | -- | -- | | |
| 0 | KILOCALORIES | Plant | -- | 2860 | -0.40616652820501614 | |
| 0 | L-BORNEOL | Plant | -- | -- | | |
| 0 | L-CAMPHOR | Essential Oil | -- | -- | | |
| 60 | LIMONENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | LINALYL-PROPIONATE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 65 | MAGNESIUM | Plant | -- | 2400 | -0.5172740870337147 | |
| 65 | MAGNESIUM | Leaf | 432 | 2400 | -0.6663684293483372 | |
| 14 | MANGANESE | Plant | -- | 81 | -0.11436285896481094 | |
| 14 | MANGANESE | Leaf | 1.5 | 8.1 | -0.4464199708972928 | |

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|----------------|----------------------|------------|---------|----------|-----------------------|--|
| 0 | MANGOLIOLIDE | Plant | -- | -- | | |
| 39 | NIACIN | Plant | -- | -- | | |
| 39 | NIACIN | Leaf | 69 | 385 | 3.4970225601256777 | |
| 16 | P-CYMENE | Shoot | -- | 9 | -0.49426810257944204 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | P-CYMEENENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | P-ETHYLBENZALDEHYDE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | P-METHYLBENZALDEHYDE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 27 | PARTHENOLIDE | Flower | -- | -- | | |
| 0 | PARTHOLIDE | Plant | -- | -- | | |
| 4 | PHOSPHORUS | Leaf | 902 | 5010 | 0.0070918616587032435 | |
| 4 | PHOSPHORUS | Plant | -- | 5010 | 0.683008160317236 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|------------------|------------|---------|----------|----------------------|--|
| 1 | PINOCARVONE | Shoot | -- | 2 | -0.6307569440575539 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 14 | POTASSIUM | Plant | -- | 22500 | 0.04901058337072094 | |
| 14 | POTASSIUM | Leaf | 4050 | 22500 | -0.34637690026129236 | |
| 0 | PROTEIN | Plant | -- | 267000 | 0.7665154169276235 | |
| 0 | PROTEIN | Leaf | 48060 | 267000 | 0.550223924536316 | |
| 0 | PROTEIN | Seed | -- | 222000 | -0.10493212955134139 | |
| 1 | REYNOSIN | Plant | -- | -- | | |
| 15 | RIBOFLAVIN | Leaf | 0.5 | 2.5 | -0.16614280918315402 | |
| 15 | RIBOFLAVIN | Plant | -- | 2.5 | -0.6210248948087893 | |
| 5 | SABINENE | Shoot | -- | 5 | -0.29059831881924897 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 0 | SABINENE-HYDRATE | Shoot | -- | 1.5 | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 5 | SANTAMARIN | Flower | -- | -- | | |
| 5 | SANTAMARIN | Leaf | -- | -- | | |
| 60 | SELENIUM | Plant | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------------------------|------------|---------|----------|----------------------|--|
| 60 | SELENIUM | Leaf | 0.3 | 1.7 | -0.251928089645715 | |
| 4 | SILICON | Plant | -- | 46 | -0.2687912012116913 | |
| 4 | SILICON | Leaf | 0.8 | 4.6 | -0.3995099669647397 | |
| 1 | SODIUM | Leaf | 9 | 48 | -0.6387597714851067 | |
| 1 | SODIUM | Plant | -- | 48 | -0.3014209590315537 | |
| 0 | TANAPARTHIN | Plant | -- | -- | | |
| 0 | TANAPARTHIN-1ALPHA,4ALPHA-EPOXIDE | Plant | -- | -- | | |
| 0 | TANAPARTHIN-1BETA,4BETA-EPOXIDE | Plant | -- | -- | | |
| 23 | TERPINEN-4-OL | Shoot | -- | 4 | -0.16552235945768073 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 9 | TERPINOLENE | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |
| 31 | THIAMIN | Plant | -- | 4.1 | -0.2974931626940486 | |
| 0 | THIAMINE | Leaf | 0.7 | 4.1 | -0.26811729173866755 | |
| 2 | THUJOPSENE | Shoot | -- | 1.5 | -0.7071067811865476 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. <i>Flavor and Fragrance Journal</i> 11(6): 367-71. |

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|-----------------------|-----------------|-------------------|----------------|-----------------|---------------------|--|
| 71 | THYMOL | Shoot | -- | -- | | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| 4 | TIN | Leaf | 4 | 21 | 0.6450694378363876 | |
| 4 | TIN | Plant | -- | 21 | 0.00964806037643002 | |
| 0 | WATER | Leaf | -- | 820000 | 0.0616753912432856 | |
| 0 | WATER | Plant | -- | 895000 | 0.5311464179022468 | |
| 77 | ZINC | Plant | -- | -- | | |
| 77 | ZINC | Leaf | -- | -- | | |